

Notice of Allowability

Application No.

10/088,747

Examiner

Jeff Piziali

Applicant(s)

EDWARDS, ERIC C.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 10 August 2006 and the Election filed 18 June 2007.
2. ☒ The allowed claim(s) is/are 1,3-5, and 7-22 (renumbered as claims 1-20).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Jeff Piziali
6 August 2007

DETAILED ACTION

Election/Restrictions

1. **Claims 1, 3-5, and 7-22 (renumbered as claims 1-20) are allowable.** The restriction requirement among species, as set forth in the Office action mailed on 6 February 2007, has been reconsidered in view of the allowability of claims to the elected invention pursuant to MPEP § 821.04(a). **The restriction requirement is hereby withdrawn as to any claim that requires all the limitations of an allowable claim.**

Claims 5, 21, and 22, directed respectively to: *a method wherein the captured image is larger than the field of view of the head mounted display, and only a portion of the captured image is displayed therein (claim 5);*

a method when portions parts of the second field of view for which image data is unavailable are detected, earlier captured image data is located, which when transformed in dependence upon its associated camera position data and the HMD position data is for display within the said parts, and the transformed earlier captured image data is displayed in those parts of the field of view (claim 21);

and a method wherein the transformed earlier captured image data is de-emphasized relative to current captured image data (claim 22), are no longer withdrawn from consideration because the claims require all the limitations of an allowable claim (in this case, elected independent claim 1).

In view of the above noted withdrawal of the restriction requirement, applicants are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may

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be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

2. Applicant's election with traverse of Species I (i.e., claims 1, 3, 4, and 7-20) in the reply filed on 18 June 2007 is acknowledged. The traversal is on the ground(s) that the claims corresponding to Species I and II relate to the same technical concept. This is not found persuasive. However, as explained above, in view of the allowability of claims to the elected invention pursuant to MPEP § 821.04(a), such arguments are moot. The restriction requirement is withdrawn as to any claim that requires all the limitations of an allowable claim.

Drawings

3. The drawings were received on 8 November 2006. These drawings are acceptable.

Allowable Subject Matter

4. Claims 1, 3-5, and 7-22 (renumbered as claims 1-20) are allowed.

5. The following is an examiner's statement of reasons for allowance:

The present invention comprises a method of motion compensation for a head mounted display. The prior art, *Hirose et al* ("*Transmission of Realistic Sensation: Development of Virtual Dome*," *Proc. IEEE VRAIS 93, IEEE Neural Networks Council, Piscataway, N.J., 01-*

1993, pp. 125-131), discloses a method of motion compensation for head mounted displays comprising the steps of: providing a captured image [Fig. 1; Image Data] from an image capture device [Fig. 1; Camera Head] to a head mounted display [Fig. 1; HMD] (see Section 1) including a display [Fig. 3; Eyephone] having a field of view [i.e. scope of view]; providing camera position data [Fig. 3; via Camera Head Controller] relating to a position of the camera and associated with the captured image [Fig. 3; via Frame Grabber]; providing HMD position data [i.e. head orientation] relating to a position of the head mounted display; transforming [Fig. 3; via Virtual Dome Generator] the image to vary a displayed location of static objects [see Figs. 5, 6, 9, 11] within the image relative to the field of view in accordance with the camera position data and the HMD position data; and, displaying portions of the image at the displayed locations, those portions remaining within the field of view (see Sections 2.1-2.3).

However, as argued by the applicants (on Pages 11-14 of the Amendment filed 10 August 2006), the prior art does not expressly teach a method of motion compensation for a head mounted display (HMD) wherein a camera tracks movement, subject to possible delay, of an operator's head to capture images within a field of view controlled by the orientation of the operator's head, wherein for each captured image received by the computer comparing the HMD position data with the camera position data associated with the captured image to determine whether an offset exists between a first field of view associated with the captured image and a second field of view corresponding to the current position of the head mounted display; and in the absence of a said offset displaying the captured image or a portion thereof in the head mounted display; and in the presence of said offset, transforming the captured image to create a transformed image comprising a portion of said captured image that overlaps said first and

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second fields of view and displaying said transformed image in the head mounted display in a part of said second field of view, the position of said part of said second field of view in the head mounted display corresponding to the position of the overlapping portion of the captured image in the second field of view, in combination with the remaining features and subject matter of the instantly claimed invention.

This distinct structural and operational arrangement has been incorporated into both pending independent claims (i.e. claims 1 and 18 -- renumbered as claims 1 and 16), thereby rendering them allowable.

Any comments considered necessary by applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Piziali
6 August 2007